

ATTORNEY DOCKET NO. 00-C-016D1 (STMJ01-00097)
U.S. SERIAL NO. 10/827,184
PATENT

BEST AVAILABLE COPY

AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph bridging page 2, line 31 through page 3, line 3 of the specification as filed (paragraph [0005] of U.S. Patent Application Publication No. 2004/0195664) with the following:

[0005] The electrostatic charge which may be carried by a human body often falls within the range of several kilovolts or more. Typical electrostatic discharge protection circuits have proven somewhat ineffective in safely dissipating such charges, which may provide sufficient energy to break through the upper dielectric/passivation layer.

Please replace the paragraphs bridging page 8, line 4 through page 9, line 9 of the specification as filed (paragraphs [0018] and [0019] of U.S. Patent Application Publication No. 2004/0195664) with the following:

[0018] After packaging is completed, lead frame 108 includes a first portion 108a underlying the integrated circuit die 104, plastic or epoxy material 112, and bond wires 114. Much of first portion 108a comprises a die paddle to which the integrated

ATTORNEY DOCKET NO. 00-C-016D1 (STMI01-00097)
U.S. SERIAL NO. 10/827,184
PATENT

BEST AVAILABLE COPY

circuit die is affixed. Second portions 108b along the sides of the integrated circuit package 102, and third portions 108c overlying a peripheral portion of an upper surface of integrated circuit package 102. (Part of the overlying peripheral portion 108c is depicted as broken-away on the left side of FIG. 1A to depict pins ~~114~~ 116). Pins 116 are also formed from portions of the stamped lead frame 108, but are, for the most part, separated from lead frame 108 during packaging trim and form operations and are held in place by plastic or epoxy material 112. At least one pin 116a (best seen in FIG. 1D) remains connected to lead frame 108, serving as a ground connection for the electrostatic discharge ring. The remaining pins are, after fabrication of integrated circuit package 102 is complete, electrically and physically isolated from lead frame 108 and pin 116a, and may instead be electrically connected to the integrated circuit die 104 via bond wires 114.

[0019] As illustrated in FIG. 1E, the electrostatic discharge ring formed by the folded portions of lead frame 108b and 108c may extend along a peripheral edge ~~118a~~ of packaged integrated circuit 102 which is opposite pins 116, with an opening through the folded lead frame portions 108b and 108c allowing access to pins 116 for an external connector. Alternatively, the electrostatic discharge ring may contain a broken region along a peripheral edge ~~118b~~ opposite pins 116. The required length of the pins which must remain exposed for a connector, the thickness of the

ATTORNEY DOCKET NO. 00-C-016D1 (STM101-00097)
U.S. SERIAL NO. 10/827,184
PATENT

BEST AVAILABLE COPY

integrated circuit 104 and plastic or epoxy material 112, and other design considerations may affect whether the electrostatic discharge ring extends along a complete circumference of the packaged integrated circuit 102.